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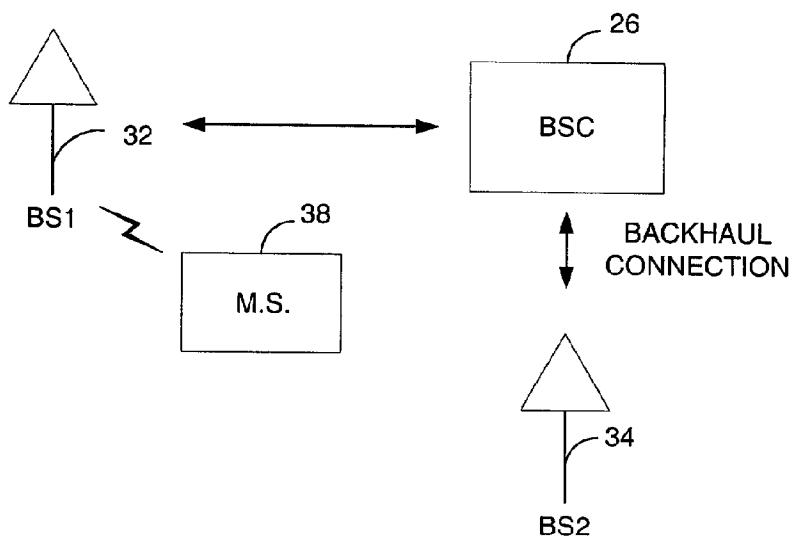
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(54) Title: METHOD AND APPARATUS FOR CALL RECOVERY IN A WIRELESS COMMUNICATION SYSTEM



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(57) Abstract: A method and apparatus for call recovery in a wireless communication system (10). When the communication link between a mobile station (38) and a base station (32) is in trouble, the mobile station and the infrastructure prearrange potential rescue base stations (34). The source cell base station contacts all recovery-capable neighbors as potential rescuers. Each rescue base station is instructed to use a default channel for rescue transmissions. The rescue transmission is considered a call recovery operation. The mobile station establishes a soft hand-off with rescue base station, wherein the FL uses the default channel and an alternate channel. Once hand-off is complete the rescue base station discontinues use of the default channel. In one embodiment, the source cell base station provides the mobile station with the list of recovery-capable neighbors as overhead during transmissions and prior to development of the communication link problem.



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International App No	
PCT/US 01/44566	

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H04Q7/38 H04Q7/32

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H04Q H04B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
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EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT
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Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 267 261 A (TIEDEMANN JR EDWARD G ET AL) 30 November 1993 (1993-11-30) column 3, line 11 -column 4, line 43 ---	1,2,4-9
X	EP 0 624 994 A (NIPPON TELEGRAPH & TELEPHONE) 17 November 1994 (1994-11-17) column 6, line 44 -column 7, line 19 column 7, line 42 -column 8, line 44 ---	1,2
X	US 5 574 996 A (RAITH ALEX K) 12 November 1996 (1996-11-12) column 2, line 22 - line 37 column 6, line 9 - line 21 ---	13
X	US 5 101 501 A (GILHOUSEN KLEIN S ET AL) 31 March 1992 (1992-03-31) column 11, line 7 - line 22 ---	14
		-/-

<input checked="" type="checkbox"/>	Further documents are listed in the continuation of box C.
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<input checked="" type="checkbox"/>	Patent family members are listed in annex.
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- *A* document defining the general state of the art which is not considered to be of particular relevance
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- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *&* document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
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30 October 2002	11. NOV 2002
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Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer
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Palencia Gutiérrez,C

INTERNATIONAL SEARCH REPORT

International Ap No
PCT/US 01/44566

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 98 05175 A (ERICSSON TELEFON AB L M) 5 February 1998 (1998-02-05) page 7, line 34 -page 9, line 10 -----	18

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 01/44566

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.: because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:

1-9, 13-20

4. No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-9

Method of triggering call recovery

2. Claims: 10-12

Method of determining the default channels for call recovery

3. Claim : 13

Wireless apparatus optimising power transmission

4. Claims: 14-17

Wireless apparatus adjusting power level when recovering a call

5. Claims: 18-20

Computer program avoiding interference between special events and the call recovery procedure

INTERNATIONAL SEARCH REPORT

Information on patent family members

International App No
PCT/US 01/44566

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
US 5267261	A	30-11-1993	US	5640414 A	17-06-1997
EP 0624994	A	17-11-1994	JP	3080204 B2	21-08-2000
			JP	6326652 A	25-11-1994
			JP	3080205 B2	21-08-2000
			JP	6326653 A	25-11-1994
			DE	69423810 D1	11-05-2000
			DE	69423810 T2	12-10-2000
			EP	0624994 A1	17-11-1994
			US	5487083 A	23-01-1996
US 5574996	A	12-11-1996	US	5539748 A	23-07-1996
			US	5603081 A	11-02-1997
			US	5883885 A	16-03-1999
			AU	681721 B2	04-09-1997
			AU	8131494 A	23-05-1995
			BR	9405705 A	28-11-1995
			CA	2152943 A1	11-05-1995
			CN	1117330 A ,B	21-02-1996
			EP	0679304 A1	02-11-1995
			FI	953268 A	30-06-1995
			JP	8508629 T	10-09-1996
			NZ	276006 A	24-11-1997
			SG	43316 A1	17-10-1997
			WO	9512932 A1	11-05-1995
			US	6331971 B1	18-12-2001
			AU	681730 B2	04-09-1997
			AU	1048095 A	23-05-1995
			AU	680071 B2	17-07-1997
			AU	1048395 A	23-05-1995
			AU	691850 B2	28-05-1998
			AU	1087495 A	23-05-1995
			AU	685885 B2	29-01-1998
			AU	1087695 A	23-05-1995
			AU	695892 B2	27-08-1998
			AU	2079997 A	24-07-1997
			AU	720332 B2	25-05-2000
			AU	2358897 A	14-08-1997
			AU	690924 B2	07-05-1998
			AU	7757094 A	18-05-1995
			AU	7865898 A	15-10-1998
			AU	7865998 A	01-10-1998
			AU	697210 B2	01-10-1998
			AU	8131394 A	23-05-1995
			BR	9404316 A	04-07-1995
			BR	9405702 A	28-11-1995
			BR	9405703 A	28-11-1995
			BR	9405704 A	28-11-1995
			BR	9405743 A	05-12-1995
			BR	9405927 A	05-12-1995
			CA	2134695 A1	02-05-1995
			CA	2152942 A1	11-05-1995
			CA	2152944 A1	11-05-1995
			CA	2152945 A1	11-05-1995
			CA	2152946 A1	11-05-1995
			CA	2152947 A1	11-05-1995
			CA	2303751 A1	02-05-1995
			CA	2309314 A1	11-05-1995

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Ap
n No
PCT/US 01/44566

Patent document cited in search report	Publication date		Patent family member(s)	Publication date
US 5574996	A		CA 2309333 A1 CA 2309374 A1 CA 2343587 A1	11-05-1995 11-05-1995 11-05-1995
US 5101501	A	31-03-1992	AT 188073 T AU 646421 B2 AU 6904191 A BR 9007828 A CA 2073027 A1 CN 1051832 A DE 69033402 D1 DE 69033402 T2 DK 500775 T3 EP 0500775 A1 ES 2142800 T3 FI 922081 A GR 3032996 T3 HK 1014810 A1 IL 96219 A JP 3014753 B2 KR 157636 B1 MX 173031 B NO 921793 A SG 48290 A1 WO 9107020 A1 ZA 9008857 A	15-01-2000 24-02-1994 31-05-1991 25-08-1992 08-05-1991 29-05-1991 27-01-2000 23-08-2001 13-06-2000 02-09-1992 01-05-2000 07-05-1992 31-07-2000 12-01-2001 12-04-1994 28-02-2000 16-11-1998 28-01-1994 06-07-1992 17-04-1998 16-05-1991 28-08-1991
WO 9805175	A	05-02-1998	AU 724174 B2 AU 3713197 A CN 1228231 A DE 19781897 T0 GB 2331673 A ,B WO 9805175 A2	14-09-2000 20-02-1998 08-09-1999 23-09-1999 26-05-1999 05-02-1998